CLAIMS

What is claimed is:

1. A method, comprising:
   a. converting a television broadcasting signal into a digitized video signal;
   b. separating luminance information and chrominance information of the digitized video signal in a dimension that has a constancy value below a predetermined threshold level; and
   c. optionally converting the separated luminance information and chrominance information into a first output format, wherein the first output format conforms to input requirements of a display apparatus.

2. The method according to claim 1, further comprising: calculating the constancy value in a horizontal dimension (hereinafter H constancy value), a vertical dimension (hereinafter V constancy value) and a temporal dimension (hereinafter T constancy value).

3. The method according to claim 2, further comprising:
   a. sampling the video signal at an integer multiple of a frequency of a chrominance sub-carrier to generate digitized samples; and
   b. storing a number of the digitized samples in a storage medium.

4. The method according to claim 3, further comprising: measuring an absolute value between two of the digitized samples on a same scan line that have same phases of the chrominance sub-carrier to establish the H constancy value.

5. The method according to claim 3, further comprising: measuring an absolute value between a first digitized sample and a second digitized sample to establish the V constancy value, wherein the first digitized sample is in a particular position within a first scan line, the second digitized sample is in the same particular position within a second scan line, and the first scan line and the second scan line have same phases of the chrominance sub-carrier.

6. The method according to claim 3, further comprising: measuring an absolute value between a first digitized sample and a second digitized sample to establish the T constancy value, wherein the first digitized sample is in a particular position within a first frame, the second digitized sample is in the same particular position within a second frame, and the first frame and the second frame have same phases of the chrominance sub-carrier.

A1 cont'd

7. The method according to claim 1, further comprising: selecting an appropriate filter to perform the separating based on the constancy value.

8. A computer-readable medium including a plurality of instructions readable therefrom, the instructions, when executed by a computer system, cause the computer system to perform operations comprising:

a. converting a television broadcasting signal into a digitized video signal;

b. separating luminance information and chrominance information of the digitized video signal in a dimension that has a constancy value below a predetermined threshold level; and

c. optionally converting the separated luminance information and chrominance information into a first output format, wherein the first output format conforms to input requirements of a display apparatus.

9. The machine readable medium according to claim 8, the instructions further comprising:

a. sampling the video signal at an integer multiple of a frequency of a chrominance sub-carrier to generate digitized samples; and

b. storing a number of the digitized samples in a storage medium of the computer system.

10. The machine readable medium according to claim 9, the instructions further comprising:
calculating the constancy value in a horizontal dimension (hereinafter H constancy value), a vertical dimension (hereinafter V constancy value) and a temporal dimension (hereinafter T constancy value) based on the digitized samples retrieved from the storage medium.

11. The machine readable medium according to claim 10, the instructions further comprising:
measuring an absolute value between two of the digitized samples on a same scan line that have same phases of the chrominance sub-carrier to establish the H constancy value.

12. The machine readable medium according to claim 10, the instructions further comprising:
measuring an absolute value between a first digitized sample and a second digitized sample to establish the V constancy value, wherein the first digitized

sample is in a particular position within a first scan line, the second digitized sample is in the same particular position within a second scan line, and the first scan line and the second scan line have same phases of the chrominance sub-carrier.

A' cont'd

13. The machine readable medium according to claim 10, the instructions further comprising:

measuring an absolute value between a first digitized sample and a second digitized sample to establish the T constancy value, wherein the first digitized sample is in a particular position within a first frame, the second digitized sample is in the same particular position within a second frame, and the first frame and the second frame have same phases of the chrominance sub-carrier.

14. The machine readable medium according to claim 8, the instructions further comprising:

selecting an appropriate filter to perform the separating based on the constancy value.

15. An apparatus, comprising:

a. a bus;

b. a processor coupled to the bus;

c. a system controller coupled to the bus;

d. a storage medium coupled to the system controller; and

e. an improved video decoder, further comprising:

i. an analog-to-digital converter, coupled to the bus, to convert a television broadcasting signal into a digitized video signal and store digitized samples of the digitized video signal in the storage medium;

ii. a constancy detector, coupled to the analog-to-digital convert, to determine a constancy value in a horizontal (hereinafter H constancy value), vertical (hereinafter V constancy value) and temporal (hereinafter T constancy value) dimension;

iii. a luminance/chrominance separation engine, coupled to the constancy detector, to separate luminance information and chrominance information of the digitized video signal; and

iv. a display encoder, coupled to the luminance/chrominance separation engine, to optionally convert the separated luminance information and chrominance information into a first output format, wherein the first output format conforms to input requirements of a display apparatus.

16. The apparatus according to claim 15, the analog-to-digital converter further samples the video signal at an integer multiple of a frequency of a chrominance sub-carrier to generate the digitized samples.

A1 cont'd

17. The apparatus according to claim 16, the constancy detector further:
    a. calculates the constancy value based on the digitized samples retrieved from the storage medium; and
    b. generates a selection signal to represent the dimension wherein the constancy value is below a predetermined threshold value.

18. The apparatus according to claim 15, the luminance/chrominance separation engine further comprises:
    a. a plurality of filters; and
    b. a selector, coupled to the filters, wherein the selector chooses the filter to perform the separation based on the selection signal.

19. The apparatus according to claim 17, the constancy detector further measures an absolute value between two of the digitized samples on a same scan line that have same phases of the chrominance sub-carrier to establish the H constancy value.

20. The apparatus according to claim 17, the constancy detector further measures an absolute value between a first digitized sample and a second digitized sample to establish the V constancy value, wherein the first digitized sample is in a particular position within a first scan line, the second digitized sample is in the same particular position within a second scan line, and the first scan line and the second scan line have same phases of the chrominance sub-carrier.

21. The apparatus according to claim 17, the constancy detector further measures an absolute value between a first digitized sample and a second digitized sample to establish the T constancy value, wherein the first digitized sample is in a particular position within a first frame, the second digitized sample is in the same particular position within a second frame, and the first frame and the second frame have same phases of the chrominance sub-carrier.